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ABSTRACT

This study examined the influence of the family environment, day care in the infant's first year, and the fit between child characteristics and the caregiving context as correlates of children's social behavior. Subjects were 39 Caucasian infants and their mothers and caregivers. Mothers and caregivers were asked to rate children's behavior on a series of items related to four composites of children's social behavior: sociability, distractibility, difficulty, and aggression/disobedience. All families were interviewed about the family's background and the child's day care experience. Mothers completed the Family Environment Scale's subscales on expressiveness, conflict, independence, and control. The fit between children's characteristics and their caregiving environments was assessed by means of a list of 20 desirable and 20 undesirable child behaviors which was given to mothers and caregivers. Findings revealed that individual differences in children's social behavior were influenced by the family environment and the relationships the children established with their parents and caregivers. Results suggested that the fit between children and the significant adults in their lives was much more promising for explaining variance in children's behavior than explaining the day care experience. (RH)

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The Effects of Infant Day Care on Children's Social Behavior: An Examination of Within-Group Differences

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The Effects of Infant Day Care on Children's Social Behavior: An Examination of Within-Group Differences

The effects of infant day care on the developing infant-mother relationship and the long term consequences for children's social development have been the focus of much recent controversy. Several studies have reported an association between extensive nonmaternal care (i.e., 20 hours or more per week) started in the first year of infancy and heightened insecurity of the infant-mother attachment relationship (Barglow, Vaughn & Molitar, 1987; Belsky & Rovine, 1988) as well as increased aggressiveness and noncompliance in preschool- and school-aged children (Barton & Schwartz, 1981; Haskins, 1985; Rubenstein & Howes, 1983; Schwartz, Strickland, & Krolick, 1974). Many of these investigations, however, have examined between-group differences, that is, comparisons are often made between children receiving some form of nonmaternal care and those reared at home exclusively by their mothers. While such studies provide us with answers regarding mean differences across groups of children, individual variation within samples of day care infants is often overlooked.

In one study which did examine differences within a sample of mothers working greater than 20 hours a week during the infant's first year, Belsky and Rovine (1988) found that infants were more likely to develop insecure relationships with their mothers if mothers were less interpersonally sensitive, perceived their infants as more temperamentally difficult, reported less marital contentment, and were more career-oriented than mothers of securely attached infants. Such findings underscore the importance of including aspects of the family environment as well as maternal and infant characteristics in determining the effects of day care on infant outcomes. The purpose

of the present investigation was to examine the influence of the family environment, day care experience during the infant's first year, and the fit between child characteristics and the caregiving context as correlates of children's social behavior, reported by both their mothers and their caregivers.

Method

Sample

The subjects for this study were 39 Caucasian infants (23 male, 16 female), their mothers, and their caregivers participating in an ongoing longitudinal investigation examining the incidence of illness in day care and its effect on children's development. The mean age of the children in this sample was 15 months (range: 10 - 25 months) at the time of the initial interview. For 59% of the families, this was their first child. All infants had been enrolled in one of three day care centers in Central Pennsylvania and had started center care sometime within their first year with the majority (86%) enrolled in care on a regular basis within their first 6 months. Hours spent in day care ranged from 8 to 50 hours per week with a mean of 33.4 hours. In general, the sample can be described as middle-class with most parents reporting some college education and with approximately half of the parents employed in semi-professional or professional occupations.

Procedures

Both mothers and caregivers were asked to rate the child's behavior on a series of items using a 4-point Likert scale. On the basis of findings from other day care studies, four composites of children's social behavior were formed conceptually from these items. Our Sociability composite assessed how cheerful, out-going, and sociable the child

was, and how much the child was liked by his/her peers. Distractibility measured how fidgety, on-the-go, and inattentive the child was, while the Difficulty composite assessed the extent to which the child threw temper tantrums and was considered to be whiney and fussy. Finally, our last composite, which we are calling Aggression and Disobedience, measured the degree to which children destroyed toys, disobeyed instructions, picked fights with their peers, and were disliked by their peers.

All families were initially interviewed in order to collect information pertaining to the family's background and the child's day care experiences. For the present investigation, we included mother's education, mother's occupation, and the combined household income as indicators of family background. Consistent with numerous other studies in this area, we chose age of entry and the number of hours per week the child was enrolled in center care as indicators of the child's day care experience.

Family environment. In order to assess the family environment, mothers were asked to complete the Family Environment Scale (FES: Moos, 1974). We include here only those four scales which we believed would have some relevance to the development of children's social behavior. The Expressiveness and Conflict subscales assess the extent to which family members are encouraged to express their feelings directly and the extent to which anger, aggression, and open conflict characterize family interaction. We also included the Independence subscale which measures the extent to which family members are encouraged to be assertive, self-sufficient, and to make their own decisions, and the Control subscale which measures the rigidity of family rules and the extent to which family members order each other around.

Goodness-of-fit. In order to assess the influence of children's characteristics, we utilized a goodness-of-fit model which focuses on the "fit" between the child and his/her caregiving environment (Thomas & Chess, 1977; Lerner et al., 1985). Such a model proposes that it is not simply the possession of specific temperamental characteristics which contribute to psychosocial adjustment, but that these behavioral characteristics of the child must correspond to the demands of the context in order for healthy adjustment to occur. The "fit" between children's characteristics and their caregiving environments was assessed by giving both mothers and caregivers a list of 20 desireable and 20 undesireable child behaviors, and asking them to rank the five most desireable and five most undesireable child characteristics from this list. A goodness-of-fit index was calculated for each child by examining the match between the mother's (or caregiver's) choice of her most desireable and undesireable child behaviors and her actual rating of the study child on these behaviors. So, for instance, if a mother listed fussiness as her most undesireable child behavior, but then rated her own child as often exhibiting such behavior, this child's behavior was seen as a poor-fit with his/her mother's perceptions and the demands of the caregiving environment. The goodness-of-fit index could range from 0, indicating an extremely poor-fit, to 10, indicating a perfect fit.

Results

We first examined the intercorrelations between mother's and caregiver's reports of children's social behavior and found, as did Phillips et al. (1987), no significant correspondence between parent and caregiver reports. It could be the case that children are behaving differently in these two different contexts, or that mothers and teachers have different perceptions of the children's behavior, or are using different referents by

which to judge children's behavior. In any case, maternal and caregiver reports in this investigation appear to be independent ratings of the child's behavior.

In order to examine the correlates of children's behavior, we calculated partial correlations, controlling for the child's age, between each of our dependent variables and the variables representing care experience, family background, family environment, and the goodness-of-fit index.

Table 1
Care Experience

We first examined the role of care experience. Children enrolled for more hours per week in center care are rated by their mothers as significantly more aggressive, and by their caregivers, as significantly more distractible, but also more sociable. While age of entry does not appear to have an effect on children's behavior at home as reported by their mothers, it does have a significant influence on the children's behavior in day care. Children entering care at older ages within the first year are rated as more sociable by their caregivers, but also as more distractible and more aggressive.

In an examination of the associations between family background variables and mother's and caregiver's reports of children's social behavior, only mother's education revealed any significant findings. More educated mothers had more sociable children according to both mothers and caregivers, and had children considered to be less difficult by their mothers.

Based on several recent studies which have examined family characteristics, we expected the family environment to have some influence on children's social behavior as well. In particular, we expected that children from families described as less conflicted,

less controlling and rigid, and more expressive in their relationships would be more sociable as well as less distractable, less difficult, and less aggressive.

Table 2
Family Environment

As can be seen in the folllowing table, only the Conflict and Control subscales revealed any significant associations. Mothers, but not caregivers, rated children as significantly less sociable and more difficult if they also reported more family conflict. There was also a tendency for children in more conflicted households to be more distractable as well. Similarly, children from very controlling families were, according to their mothers, significantly less sociable and tended to be more difficult. Caregivers rated children from these controlling and rigidly structured families as far more likely to be distractible and aggressive in day care.

As a final correlate of social behavior, we examined the relation between our goodness-of-fit index and children's behavior at home and at daycare. We examined the fit between child behavior and mother's perceptions when analyzing maternal ratings and the fit between child behavior and caregiver's perceptions when considering caregiver's behavioral ratings.

Table 2
Goodness-of-Fit

You can see from the table that children judged to be more sociable by both mothers and caregivers are also a better fit with their caregiving environments, whereas more difficult children fit poorly with their home environment and more aggressive

children are considered a poor-fit with the day care environment.

Hierarchical Regression Model

Although our findings up until this point lend some insight into those aspects of the child's family environment and care experience which contribute to individual differences in day care children's behavior, we still have not tested which of these areas may be more influential than others in accounting for variation in children's behavior. Thus, as a final step in our analyses, we chose to use a hierarchical regression model and test which of these areas of influence contributed significantly to the variance in children's social behavior. We chose to include only those variables which revealed the strongest associations in the bivariate analyses just presented. So, for instance, we used mother's education to reflect the family background variables, while we used only the Conflict and Control subscales from the family environment variables . Both the age of entry and number of hours enrolled in care were used to represent child care experience, while the goodness-of-fit index was used to represent more proximal person-environment relations.

Following a strategy similar to that employed by Phillips, McCartney, & Scarr (1987) we entered child's age at the time of the interview as the first regression step. Because several studies have shown that utilization of certain child care arrangements often covaries with family background variables, mother's education was entered as the second step, followed by the Control and Conflict scales of the FES. This particular approach was chosen so as to remove the maximum amount of variance attributable to differences in the children's family before examining the influence of child care experience. The two child care variables, age of entry and hours enrolled in center

care, were then entered in the fourth regression step, with the goodness-of-fit index entered in the fifth and final step. The entrance of the variables in the last two steps of the model allowed us to examine if significantly more variance in parent's or caregiver's ratings was accounted for by child care experience or the extent to which children fit with the demands of their caregiving environment. The results of this analysis are presented in the following table.

Table 3
Hierarchical Regression-Mother

If we examine parent's ratings first, you'll notice that either the family background or the family environment account for significant or marginally significant amounts of additional variance in children's social behavior. In no instance did child care experience contribute significantly to the amount of explained variance. However, even after child care experience had been entered into the regression model, the fit between the child and his/her caregiving environment accounted for a significant 17% of the variance in difficult child behavior and a marginally significant 14% of the variance in aggressive behavior.

Table 4
Hierarchical Regression-Caregiver

A similar picture emerges from the caregiver's reports of children's behavior. While either the family background or family environment were responsible for explaining additional amounts of variance in children's sociability, distractability, and aggression, the child's day care experience did not contribute significantly to the variance in children's

behavior. The goodness-of-fit index, however, did account for an additional 15% of the variance in children's sociability and an additional 18% in children's aggression, once the child care variables had been entered. Finally, it should also be noted that these variables combined accounted for 30 to 65 percent of the total variance in children's social behavior.

Conclusion

To briefly summarize, we found that individual differences in children's social behavior are influenced by the family environment in which the child is reared as well as the relationships they establish with their parents and caregivers. Recall that children from more conflicted and controlling family environments were judged to be less sociable, more distractable, more difficult, and more aggressive in either the home or day care environment. Even though day care experience appeared to have an effect on children's social behavior, as revealed in our bivariate analyses, results from the hierarchical regression suggested that the child's family background, family environment, and the fit between children and the significant adults in their lives, were much more promising in explaining variance in children's behavior than the day care experience per se. It may be that quality of care, which we did not measure, is a more influential moderator of day care effects than age of entry and hours spent in care. We hope to examine the quality of these day care environments at a later date once all the subjects have been enrolled in our study.

While our index of parent-child and caregiver-child fit does not necessarily measure the developing relationship between the child and his/her mother or caregiver, one could argue as have Thomas and Chess (1977) and Lerner et al. (1985) that a child's

"difficult" characteristics lead to poor interaction between the child and the caregiver when such behaviors are not what the caregiver or parent find desireable. Thus, difficult interaction arises not because of a particular attribute of the child, but the failure of that attribute to facilitate positive interaction between the child and the caregiving environment. In future analyses, we wish to examine not only the fit between the child and his/her environment, but the fit between the mother's expectations for child behavior and the caregiver's expectations. Perhaps when mother's and caregiver's expectations for the child are widely discrepant, children have a greater difficulty in adjusting from the home environment to the day care environment. In any case, the findings emanating from the present investigation suggest that further research is needed which examines both the caregiving and family environments of children entering care within their first year before concluding that early nonmaternal care experience is detrimental to children's adjustment and social development.

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Sample Characteristics

Child Characteristics

39 infants (23 male, 16 female)

Average age: 15 months (range: 10-25 mos.)

Day Care Experience

Age of Entry: **53% by 3 months**
33% between 3 and 6 months
11% between 6 and 9 months
3% between 9 and 12 months

Average Number of Hours in Care: 33.4 hours/week
(range: 8-50 hours/week)

Family Background

Mother
Mean Age = 31 years
Education: 69% some college or college graduate
Occupation:
46% unskilled/skilled
54% semi-professional/ professional

Father
Mean Age = 35 years
Education: 53% some college or college graduate
Occupation:
51% unskilled/skilled
49% semi-professional/ professional

Mean Household Income: $34,788 (range: $7200-$70,000)

Study Measures

Children's Social Behavior-Parent and Caregiver Report

1. **Sociability**
2. **Distractibility/Hyperactivity**
3. **Difficulty**
4. **Aggression/Noncompliance**

Family Background

1. **Mother's Education**
2. **Mother's Occupation**
3. **Household Income**

Day Care Experience

1. **Age of Entry**
2. **Hours in Center Care per Week**

Family Environment Scale (Moos, 1974)

1. **Expressiveness**
2. **Conflict**
3. **Independence**
4. **Control**

Goodness-of-Fit

1. **Child-Mother**
2. **Child-Caregiver**

TABLE 1

Partial Correlations Between Day Care Experience and Children's Social Behavior at Home and at Day Care

Mother's Reports

	Sociable	Distract	Difficult	Aggression
Age of Entry	-.07	.01	-.01	-.11
Hrs. in Care	.28	.21	-.10	.44*

Caregiver's Reports

	Sociable	Distract	Difficult	Aggression
Age of Entry	.50*	.47*	-.23	.44*
Hrs. in Care	.63**	.50*	.22	.28

* $p<.05$
** $p<.01$

TABLE 2

Partial Correlations Between Family Environment Scales, the Goodness-of-Fit Index, and Children's Social Behavior

Mother's Reports

	Sociable	Distract	Difficult	Aggression
Expressive	.08	-.16	-.09	.12
Conflict	-.35*	.28#	.32*	.21
Independence	.20	-.21	-.01	-.14
Control	-.45**	.12	.28#	-.06
Good-fit	.45**	-.28#	-.54***	-.18

Caregiver's Reports

	Sociable	Distract	Difficult	Aggression
Expressive	-.36#	-.25	-.22	.00
Conflict	.06	.26	.01	-.01
Independence	.14	-.25	-.11	-.06
Control	.19	.43*	.00	.45*
Good-Fit	.51**	-.27	-.38	-.49*

# $p<.07$
* $p<.05$
** $p<.01$

TABLE 3
Hierarchical Regression of Children's Social Behavior on Age, Family Background, Family Environment, Child Care Experience, and Goodness-of Fit

Mother's Reports

	Sociable	Distract	Difficult	Aggression
Change in R2				
Family Background:	.10	.02	.17*	.01
Family Environment:	.08	.18#	.06	.06
Care Experience:	.14	.06	.02	.12
Good-Fit:	.01	.01	.17*	.14#
Total R2 =	.34	.47	.50#	.35

# p<.07
* p<.05
** p<.01

Note: Total R2 includes additional variance accounted for by child's age entered into Step 1 of regression

TABLE 4
Hierarchical Regression of Children's Social Behavior on Age, Family Background, Family Environment, Child Care Experience, and Goodness-of-Fit

Caregiver's Reports

	Sociable	Distract	Difficult	Aggression
Change in R2				
Family Background:	.21*	.03	.01	.00
Family Environment:	.09	.31**	.01	.26*
Care Experience:	.17	.12	.15	.03
Good-Fit:	.15**	.07	.10	.18*
Total R2 =	.65**	.62**	.29	.50#

# p<.07
* p<.05
** p<.01

Note: Total R2 includes additional variance accounted for by child's age entered into Step 1 of regression